

SELECT COMMITTEE ON  
SCIENCE AND TECHNOLOGY

MEETING WITH THE  
PRESIDENT OF THE BOARD OF TRADE

REPORT WITH EVIDENCE

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*Ordered to be printed 29th October 1997*

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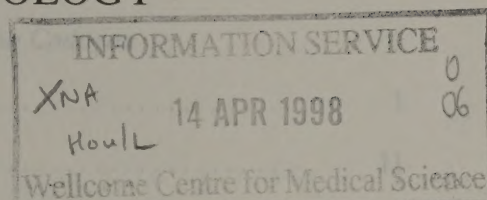
The Rt Hon. Margaret Beckett

MP John Birtle MP and Sir John

Oral evidence 29th October 1997

Supplementary notes

SELECT COMMITTEE ON  
SCIENCE AND TECHNOLOGY



Science and state

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# SECOND REPORT

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# SECOND REPORT

29th October 1997

By the Select Committee appointed to consider Science and Technology.

## ORDERED TO REPORT

### MEETING WITH THE PRESIDENT OF THE BOARD OF TRADE

On Wednesday 29 October 1997 the Select Committee received evidence from the Right Honourable Mrs Margaret Beckett MP, President of the Board of Trade; John Battle MP, Minister of State for Science, Energy and Industry; and Sir John Cadogan CBE FRS FEng, Director-General of the Research Councils.

The witnesses presented the science and technology policies of the new administration, and answered particular questions on the Dearing Report; public expenditure on science, engineering and technology; telecommunications and information technology; and the EU Framework Programme.

A transcript of these exchanges is appended to this Report, for the information of the House, together with answers in writing to two questions concerning innovation.

## APPENDIX

*Members of the Select Committee*

Lord Carmichael of Kelvingrove  
Lord Craig of Radley  
Lord Dainton  
Lord Dixon-Smith  
Lord Flowers  
Lord Gregson  
Baroness Hogg  
Lord Howie of Troon  
Lord Jenkin of Roding  
Lord Kirkwood  
Lord Perry of Walton  
Lord Phillips of Ellesmere (Chairman)  
Baroness Platt of Writtle  
Lord Porter of Luddenham  
Lord Soulsby of Swaffham Prior  
Lord Tombs  
Lord Winston



# MINUTES OF EVIDENCE

TAKEN BEFORE THE SCIENCE AND TECHNOLOGY COMMITTEE

WEDNESDAY 29 OCTOBER 1997

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Present:

Craig of Radley, L.  
Dixon-Smith, L.  
Flowers, L.  
Gregson, L.  
Hogg, B.  
Jenkin of Roding, L.  
Kirkwood, L.

Perry of Walton, L.  
Phillips of Ellesmere, L. (Chairman)  
Platt of Writtle, B.  
Porter of Luddenham, L.  
Soulsby of Swaffham Prior, L.  
Tombs, L.

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THE RT HON MARGARET BECKETT, a Member of the House of Commons, President of the Board of Trade and Secretary of State for Trade and Industry, and MR JOHN BATTLE, a Member of the House of Commons, Minister of State for Science, Energy and Industry, were examined; and SIR JOHN CADOGAN, CBE, FRS, FEng, Director-General of the Research Councils, was called in and examined.

*Chairman*

1. President, Minister and Sir John, welcome. Thank you very much for coming. You will notice you have attracted the largest audience that we have had for some time, and that is not surprising. I wonder, would you like to begin, President, by making any introductory remarks?

(*Mrs Beckett*) Thank you very much, my Lord. We were delighted to take up your invitation to meet your Committee and to build on the initial discussions that you and I had at our meeting on 17 July. I hope you will not mind if I say at the outset that I am extremely honoured, and intimidated, to see such a distinguished gathering, and perhaps also to find myself in such unexpectedly numerous company; I thought this might be a quiet, relatively private occasion! Can I straight away introduce John Battle, whom I hope most of you will know, or know of, who is our Minister for Science, Energy and Industry, and of course you already know Sir John Cadogan, the Director General of the Research Councils. Can I straight away apologise on behalf of Sir Robert May, the Chief Scientific Adviser? He very much regrets the fact that he is not able to be with us this morning but he has what I hope the Committee will think is a very worthwhile engagement, he has a long-standing engagement to give a major presentation to the United States' National Academy of Science Forum on Biodiversity, on the theme of "The Quest for a Sustainable World". I hope the Committee will feel this is an engagement he should be carrying out, and I think he will make a worthwhile contribution to that discussion.

I was particularly pleased to have been given the job of Cabinet Minister for Science and Technology alongside my responsibilities as the President of the Board of Trade because I have some degree of scientific and engineering background myself. As you will be well aware, my Lords, that is not always common in the House of Commons. I am assisted, obviously, in that role by John Battle and supported by Sir Robert and Sir John. I would like to take the opportunity to briefly outline what I see as the main aims and the key priorities in that role as Cabinet Minister for Science and Technology. First, I think it is vitally important both to maintain and to build on

our strong science and engineering base, and, in particular, recognise that its most important resource and its most important output is, in fact, the people who are engaged in work in that science and engineering base. Secondly, I want to develop stronger links between science, business and government. I hope the Committee will be aware that the overall theme that we are adopting in the department is to pursue competitiveness, in particular through partnership. That, of course, is reflected in what we want to see in our relationship with the science community and the relationship of that community with others. Alongside the general, very important task of helping British business to make better use of science to increase their competitiveness, we would also like to see more attention given to the role of science in contributing to the quality of life. That is important in itself and it is also very important in terms of contributing to public understanding of science and, in particular, the understanding of our young people about the importance and the worth of the contribution that science can make. That, I think, has to be a particularly important theme. Thirdly, I want to strengthen the voice of science in government, so that decisions across government are based on the best scientific advice. I hope I will not offend anyone by saying that it has often struck me as evidence of a defect, to some degree in our educational achievement in the past, that so many, even among the political classes, find difficulty in distinguishing between evidence and opinion. I think that anything that we can do to strengthen that kind of understanding across government can only be of general benefit. We intend to take a measured—if you like, an almost analytical—approach to the development of science and technology policy. I have given the matter some considerable thought but I do not think there is any dramatic single step that we can, or should, take that will in some way transform our approach to, and our success in, science policy. It seems to me it is a question rather of a whole range of small actions across a range of activities, and that that is, therefore, the way government should direct its own attention. I also think it is extremely important, and we have already begun—John and I—to do this, that we should listen very carefully to



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[Continued]

Chairman *contd.*]

what the scientific community and others have to say about their perception of the needs and problems of the science base, and that we should consider our science and technology holistically—to use the rather fashionable word—as a system, rather than being a little destructive and concentrating on particular issues.

We have taken a number of steps, even in these fairly early days in the Government's life, which I hope do begin to demonstrate our commitment to make a difference. The science and engineering base does form part of the top level of the education system—and I mentioned earlier our concern for the people in the science base. As we see it, it is creating the researchers who will both continue to enrich the science and engineering base itself and also be employed in industry to modernise, innovate and to create wealth. We think it is important that they are treated properly, and we are very mindful of what we have heard over recent years—concerns about security and about the feeling that there are limited long-term prospects. We are supporting work to improve the career management of contract researchers, following up the research careers Concordat, which I very much welcome. Also, of course, I have taken, and will take, a strong personal interest in encouraging the participation of women at all levels in science and technology. In government, as I say, we very much endorse Sir Robert May's guidance to departments on the use of scientific advice in policy making, and we are arranging for that guidance to be followed throughout Whitehall. In information and communication technologies we have injected new finance into the "IT For All" initiative and promoted an accelerated roll-out of the Information Society Initiative Programme for Business. We are consulting now on the National Grid for Learning, about which you may have heard some publicity, and we will soon be launching—very soon, in fact—the Internet Enterprise Zone. From the point of view of promoting long-term thinking, we have put new momentum into the Foresight Programme. We undertook immediately an audit of Government departments' support for Foresight and published the results of that last week. It has been decided to set up a new ministerial group to oversee progress in getting Foresight thinking embedded into mainstream policy-thinking across Whitehall. The setting up of that group has been very much welcomed by a number of my senior Cabinet colleagues. We have also invited bids for the new Foresight Link awards for projects to address Foresight priorities, making £10 million of DTI funding available for that, and we are renewing efforts to engage business more fully with Foresight, especially small firms. On quality of life, we have injected new life into the EQUAL initiative, which aims to use research to help to give older people a longer period of higher quality life. They are the perfect example of the concerns about which I spoke at the outset.

I am not going to try, My Lord Chairman, to itemise everything that we are doing or the individual steps we are taking, because that would take up too much of your time, but, obviously, we are also considering very carefully the research recommendations of the Dearing Committee and—

as is the Government as a whole—we are undertaking a comprehensive spending review. That review is taking place across all departments. The Committee may be aware, but let me reaffirm, that one of my early actions was to confirm the ring-fencing around the science budget within the DTI and, also, to establish a separate spending review for the science budget. I cannot, of course, predict what the outcome will be either of the considerations on higher education research or the comprehensive spending review, but they are being very carefully considered and examined. You have, I think, now received the Government's responses to the helpful reports on the Innovation-Exploitation Barrier and on the European Union Framework Programme, and we will between us endeavour to answer your questions on these and any other issues that you want to raise, my Lord.

2. Thank you very much, indeed. We were, as you know, proposing to begin with the Dearing Report and the science and engineering base, which you mentioned towards the end of your introduction, although of course we recognise that the Dearing Report was addressed to two departments, of which you are one. Particularly in your part of the responsibility, Dearing identified a funding gap of, I think he said, £110 million per annum behind the full costs of research funded by the Research Councils. He suggested three ways in which that might be met. The first one, additional money, is perfectly straightforward but probably rather difficult. The second one, fewer grants, is certainly a practical option. The third one, however, "dual support transfer", seems to me to smell of robbing Peter to pay Paul and would change the science base in other directions. I wonder whether, first of all, you accept the report's finding that there is a shortfall in resources and whether you have come to any view about the options that Dearing presented?

(*Mrs Beckett*) There are two things that I would say initially, my Lord. First of all, Dearing does, as you say, identify (and he puts a particular number on it) a funding gap that he believes has arisen as a result of cuts made over a substantial period by the previous government, and that those cuts hit investment in the science infrastructure. Of course, although they do not put the same figures, the same point has been made by other commentators. I have particularly in mind the pharmaceutical companies—more widely and quite specifically, the American-owned pharmaceutical companies, who, the Committee may recall, made a report a couple of years ago now indicating the same phenomenon. He also, I think, makes a separate point which has its own importance, which is the issue of the funding of indirect costs and whether or not Research Council—and, indeed, other—grants actually do cover or recognise the proper costs of research. You will know that some moves have already been taken (and perhaps I will ask Sir John to come in on this in a moment) to increase the recognition of indirect costs. So, obviously, this is an issue where we do recognise the point that the Dearing Committee makes. We are looking, indeed, at the different options that he proposes, but also, obviously, in the context of the comprehensive spending review itself. So while I



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[Continued]

Chairman *contd.*]

dislike having to come to the Committee and say "Yes, these matters are all under consideration but I cannot give you an indication at the moment", I think you will understand that is all I can say. I do not know, Sir John, if there is anything you would like to add on that?

(*Sir John Cadogan*) Perhaps just facts, my Lord Chairman. The number £110 million may or may not be correct—it may be more, it may be less, but £110 million is a ballpark figure—but you will recall that the present overhead paid by the Research Councils on grants was raised from 40 to 45 per cent—and, in fact, has just gone up, for a technical reason, to 46 per cent. That was considered to be the right number in the context of how much money was available on the other side of the dual support system. Indeed, the other side did fall away, and that has led to the gap. £110 million is quite a large sum of money. If the funding councils were asked to provide that £110 million by putting it into Research Councils that would make a big hole in their spend. Equally, if an additional £110 million for overheads were to be found by the Research Councils out of their existing funds, then it would mean there would be no new research grants at all in the first year, and there would be no studentships. This is because the amount of available money every year, the flexible money, out of £1.3 billion is only about £120 million because so much of the money is committed ahead. After reaching a steady state, which would take three years, we would end up with a volume loss of about 25 per cent of research grants. So those are the facts, and the difficult facts which ministers have to consider in the context of the comprehensive spending review.

*Lord Flowers*

3. I understand the point which Sir John has just made very well—it is a very difficult situation—but I would like to make a plea to the President and her colleagues, if I may: that this "£110 million" should not be taken as a dual support transfer, because it is only in the Funding Council budgets that one finds money for the flexible response of universities towards the proposals of their own staff—the sort of things that they think they might be able to do, or might be able to attract funds from the Research Councils for, if they are successful. Without that money, young people, in particular, in universities have very little chance of showing what they can do and attracting proper support. The universities are already finding it very difficult to provide reasonably in that way for their staff, especially in science. I would make, therefore, a very strong plea to the President (and would be very interested to hear what she has to say about it) that whatever solution is adopted it is not that one.

(*Mrs Beckett*) I take your point, my Lord. Indeed, as Lord Phillips said at the outset, I can quite see that there is a danger of a "robbing Peter to pay Paul" consequence. I am also very mindful—and I think this very much ties in with the point you have just made—that the CST when they gave evidence for the Dearing Report, which was published sometime ago, made, I thought, a very powerful and important case, which ties in with what you are saying about the need

to try to find ways of identifying and supporting the individual researcher with tremendous potential. They identified the fact that that individual researcher, or that individual group of researchers, might not always be found in the expected places. I thought that was a powerful case in itself, but it is also a powerful case which, in some ways, backs up the point you are making about the need to preserve some flexibility and some capacity to respond to that kind of potential experiment, or work.

(*Mr Battle*) I think it is important that we ensure that we get the balance right. The Dearing Report gives exclusive options rather than inclusive ones, and I think that is the problem with the way the Dearing Report has been edited because submissions to Dearing suggested more inclusive options. That is why we have to work closely with education, to make sure the flexibility is built in. It could become too rigid because of the nature of the exclusivity of the options. That would be my response.

Chairman] The Dearing Report is also rather keen on involving industry rather more directly in supporting research.

*Lord Tombs*

4. President, the Dearing Report does, as the Chairman said, look to industry for support in a number of areas of research. Sir Ron, in giving evidence to this Committee in July, was quite optimistic about the possibility of infrastructure improvement, with industry contributing quite substantial sums of money. With my industrial background I was rather surprised by that. I doubt whether industry at large has either the capacity or the will to meet that particular desire. I wonder whether your soundings had led you to any conclusions and whether your future examination of this problem was likely to rely on such a crock of gold?

(*Mrs Beckett*) I have rather mixed feelings about that, my Lord. I would like to feel that Sir Ron, in many ways, was right in thinking that this is an untapped source which is potentially relatively easy to tap. That has not been my feeling, irrespective of what is inevitably, to a degree, a somewhat anecdotal response. The CIA, I believe, and the ABPI, have both come out very publicly and said that they just do not think this is a runner. I think there are two reasons for that. One is because of the simple and straightforward fact that there just is not this huge untapped pool of potential contribution. I see a number of industrialists there nodding like anything. There is not an untapped pool of money. I think the second reason is because, for good or ill, inevitably there is more likely to be a wish among business and industry, if they are to put in resources, to put them in where they can see them, and can explain to their Boards, if you like, what they think they are going to get in return for that investment. There will be, obviously, on occasions, a general public good sort of approach, and that is entirely laudatory, but I think to rely on it for large-scale further contributions—I am sorry to say we do not see evidence that that is likely to be forthcoming. I cannot recall exactly, but I saw somewhere an



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[Continued]

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indication that Sir Ron himself had acknowledged that the soundings he had taken had not been very encouraging, but, nevertheless, he felt encouraged!

5. Just following that up, I think there is scope for industry increasing its investment in research (largely applied research) of interest to the industry. I come from an industry that does a lot and spends a lot of money. However, it is infrastructure that bothers me. There is, for better or worse, a belief that infrastructure is the business of government. While industry is prepared to fund research work it is not prepared, generally speaking, to fund buildings. I think that is a distinction that does not come through the Dearing Report and needs to be borne in mind.

(*Mrs Beckett*) Yes, that is an important point. It is the issue of adding value, is it not? Industry feels they can add value in particular ways, but they do not feel inclined to take on what they see as the job of government itself. I do understand that. The only other thing I would add is that I think we have seen projects that have worked very well. The Joint Research Equipment Initiative is an excellent example of exactly the kind of thing that the Dearing Report is recommending, and that has been successful, but I fear I do not see the evidence to back the notion that one can then translate that into solving problems.

Lord Gregson] I was merely going to say, my Lord Chairman, that this suggestion is not new, it has been around all my working life and it has been pushed very hard by the majority of universities. I honestly cannot see how you can extract more, except by keeping saying it. It is not an immediate prospect, in my opinion.

*Lord Porter of Luddenham*

6. President, may I ask whether you are satisfied with the level of co-ordination between the two legs of the dual support system—the OST-Research Councils leg and the education departments leg—especially as regards funding mechanisms. A little while ago I believe the Science & Engineering Base Co-ordinating Committee was set up with this as a principal objective, to bring the two together and improve communication. Has it produced a good result?

(*Mrs Beckett*) I think we are seeing encouraging signs. For example, I referred earlier to the recognition that a Research Council grant ought to cover more of the indirect costs elements. That was, as I understand it, a direct result of some of the work of that co-ordinating body. Similarly, the Concordat to which, again, I think I referred at the outset, looking at career support for contract researchers, is part of the fruits of the work of that body. I am not suggesting that we would expect it to—or that any single body could—take on the whole role of promoting collaboration in the government machine; that must always be partly a matter for departments and agencies, and so on, themselves, but I think it has made a contribution in the comparatively short time since it has been set up. That is something on which we would hope to build.

7. Given the further success of that, are you fairly satisfied with the principle of the dual support system

and that the way it is working is promising enough for the future?

(*Mrs Beckett*) In looking at the way in which we channel and use funds, obviously we are looking at all of these issues in the aftermath of Dearing and in the context of the comprehensive spending review. I have an innate caution, my Lord, about an assumption that it must always be possible to sweep away something and put something better in its place; I like to have taken time for a thorough assessment of how things are working out, and time to come to a measured conclusion and to be quite confident that if we were to make changes those changes would undoubtedly give a better outcome. I have never been an advocate of change for change's sake. I am very mindful of the fact that it is a very frequent criticism of politicians that they make change for the sake of showing that someone different passed this way. I would wish for a different epitaph.

Lord Porter of Luddenham] I think most of us would agree very much with that. Thank you very much.

Chairman] That leads on naturally, President, to the next question. It might be said that the former administration swept away ACOST and the ABRC and replaced them by the Council for Science and Technology.

*Lord Flowers*

8. The Council for Science and Technology you have mentioned yourself, President, but apart from that mention and one publication I know nothing whatever about what it may have done in the past or what it may be doing now. That seems to me to be rather a bad thing, I think I ought to know what it is up to. One particular question arises about it and that is whether it could do the job which Dearing proposed of an independent advisory council on national research policy. It was not very clear what he had in mind; it might have been something like the very old Advisory Council on Scientific Policy which existed in the 1960s and looked across the whole of the nation's research activities. I do not know whether that is what he wanted, and, if so, whether that could be done by the Council for Science and Technology.

(*Mrs Beckett*) I think that does tie in perfectly with what I was saying a moment or two ago. I am mindful that there has been some concern—and some criticism even—about the CST's remit, perhaps, its role and what contribution it has made. If I recall correctly (and I am sure Sir John will correct me if I am wrong), it was intended initially to be almost a more private-advice-to-ministers kind of system, in which case it would be understandable that what it did was not more in the public domain. Certainly, in line with my general practice of looking to see whether it is possible to build on and improve what already exists, we are taking a careful look at what the CST does and how it does it, in the light of Sir Ron's recommendations and, also, in light of some of the concerns that have been expressed, even by the Council itself, as to whether it ought, perhaps, to be playing a rather more public role and ought to shed



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Lord Flowers *contd.*]

more light on what it does. For example, they gave evidence to Dearing, which was published, and the independent members of the Council have now produced something of a short response to Dearing which we propose to publish in the near future. This is something which John Battle is very much engaged on.

(*Mr Battle*) I think our view would be, coming into government, that we need to revitalise it. We need to do three things: we need to increase its prominence, its profile and its focus. I asked the Chief Scientist to give his advice in the light of Dearing to see what we could do. He presented advice in September on the whole future operation, membership, indeed, of the Council and re-energising it. I think there is a parallel as well. I cover Science, Energy and Industry and we have an independent Energy Panel that publishes annual reports, it sets agendas, it has wide respect as an independent voice, and its analyses and advice is considered to be of value to Government as well. I would like to see the Council for Science and Technology being on a par with the Energy Panel and have the same status and role. The advice I was given by the Chief Scientists was that the Council could work in a more focused way, could give detailed advice perhaps on a limited number of topics, rather than be vaguely there generally commenting in the background. One of those topics, of course, could be higher education research as well, which is what Dearing was calling for. So I think it could fill that gap. Certainly there would be a presumption in favour of publishing detailed advice from the Council, and I would expect to publish an annual report and have meetings at a high level of Cabinet to discuss that report—again, on a par with the Energy Panel. I would hope the President and myself would be able to attend meetings and we are envisaging increasing (in fact I have put the proposals forward) the independent membership of the Council to 14. I think we can beef it up. We need to increase its focus, its profile and its prominence. In that way we can have valuable and widely respected independent advice to Government across the range of science and technology issues.

9. Thank you for those helpful remarks. Can I push you one little bit further, because I do find the top level arrangements for science and technology consideration a bit obscure—publicly obscure. Is the Director-General of the Research Councils going to be allowed to get away with not having a Board to which he is responsible?

(*Mrs Beckett*) We certainly have no immediate plans to make any such change. I am aware this is an issue which has been raised in the past. Obviously, over time, one does look at all of these issues and the way such matters are handled, but, as I say, we have no immediate plans to make that change.

10. In the light of what you have said, President, and also the Minister, the Director-General, I presume, would be accountable in some sense to the CST, or whatever bodies you decide to set up?

(*Mrs Beckett*) I think those relationships are exactly the kind of things that we are looking at. I do not know if Sir John would like to add anything.

(*Sir John Cadogan*) Again, I can give facts. On the suggestion of the expert group, to which Lord

Flowers has referred, it certainly was not originally proposed to be a board to which the Director-General of the Research Councils was to be responsible. It was, I understand, to be a personal advisory group for the Director-General. That was actually amended before the present Director-General was appointed; in fact, it was something which was pursued in this Committee before I was appointed<sup>1</sup>, so I cannot possibly comment on that. As to how the advice which the Director-General gives to the Minister is achieved, it is achieved as a result of the Director-General sitting pretty close to the top of a very, very large pyramid of advice—a huge pyramid of advice—involving seven Chief Executives of the Research Councils and all the very large number of people who are put on the Councils through an open, “Nolan-clean” large consultation exercise. Then there is another pyramid of advice which consists of the Chairmen and Deputy Chairmen of the Foresight Panels, and also, of course, the President of the Royal Society and the President of the Royal Academy of Engineering. This large amount of advice has to be distilled. There is a perception that the Director-General of Research Councils somehow takes it all away one day, comes up with an answer and walks away. That, of course, is not the way it operates; an iteration goes on which gets right down to quite low levels of the scientific community. The Director-General also spends quite a bit of time going out into the constituencies, the universities and industry, to see customers. If a particular research council says, as a result of their particular pyramid, that they think a particular way of doing things is a good thing, the Director-General likes to go out and ask university vice-chancellors and individual professors whether, in fact, it is quite so. That is the mechanism which operates.

Lord Flowers] That, of course, is very welcome.

#### *Baroness Platt of Writtle*

11. President, I was delighted to hear you say that you wanted to concentrate on young people and, of course, especially women. Are you satisfied with the number of young people choosing careers in engineering and science? What will you do to encourage girls and boys—particularly the most able—into such careers? Might you revive the DTI bursary scheme?

(*Mrs Beckett*) No, I am not satisfied with the number of young people going into science and engineering, particularly, as you say, our most able young people—particularly because you ask quite specifically about them going into science and engineering careers. I have heard on many occasions—and we are talking, inevitably, to some degree, about anecdotal evidence as well as broad acceptance of validated numbers—very alarming and depressing accounts. For example, at breakfast at Downing Street the other morning (if I can name-drop slightly) I heard from a senior industrialist whose own company ran a scheme where they took

<sup>1</sup> *Science and Technology White Paper*, Eighth report of the Select Committee on Science and Technology, Session 1992-93 (HL Paper 106), Q 9ff.



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AND SIR JOHN CADOGAN

[Continued]

Baroness Platt of Writtle *contd.*]

the trouble to bring in youngsters of late school age, sixth form age—the early stages of their formative years—and give them experience which had been mutually beneficial and worked well and which many of them had thoroughly enjoyed. However, on being asked whether this was something they intended to pursue as a career, even those who were attracted thereby into a science or engineering qualification were not necessarily going to work—in fact, they almost certainly were not going to work—in engineering or in science or, indeed, in industry at all, because their perception was that the money and success was elsewhere. That I find deeply depressing and very alarming from the point of view of our future. So I cannot be content with that situation. I think there are two or three areas of long-standing concern. We all recognise that these debates have been going on since I was a student and a lot longer than that, but I do not think for that reason we can afford to be complacent or can afford not to do everything we can to move things forward. One area that concerns me is whether there are enough people who are getting a general grounding in science, and that has been a concern forever. I resent the assumption that in some way that is not a worthwhile general background to doing anything. Despite what I said about people not going into dedicated careers, I think the quality—if I recall correctly—and the inputs in terms of the qualifications of students going into such higher education and, also, the outcome in terms of their success in what they achieve, is above average for science and engineering graduates. That, in itself, speaks to the fact that it is worthwhile. There is a second issue which is the issue of whether or not we have enough people who are qualified to a suitable level and have skills and who are prepared to work in a science, or engineering, or industrial—or any other context—without automatically seeing themselves as the research scientist who is going to win the Nobel Prize. I do not know whether these words are unfashionable, but I would almost say that certainly in the past it has been a sort of “class thing” that if you were going to be in a career in science or engineering then you were going to be a professor or you were going to aim for a Nobel science prize, and nothing else was worth doing. Whereas, actually, there is a huge range of tremendously worthwhile and very, very satisfying careers to be had across the sciences. That is the second area of concern I have. The third area is just this issue of getting the best people to go into the kind of careers that we need and getting people to recognise what contribution science can make. I have a bit of a hobby horse about this, in the sense that I think we actually have a very great opportunity in this generation to begin to turn round what has been a historic problem, because it is exactly the kind of young people, who in the past it has been assumed would not be interested in science or in engineering or in industrial careers in any shape or form (because they were creative, and generally concerned about the state of the world and so on) who are concerned about the environment. What we have to do is to make sure that we get across to all of them the message that there is nothing wrong with marching for the environment but actually becoming a scientist and helping to solve the problems presented—whether it is by global warming or

pollution—is an infinitely more constructive and worthwhile and beneficial thing to do. So I think we have a big opportunity. I am very encouraged by the Year of Engineering Success, which I think has done great things. I think the next impetus that is being planned for that is excellent. There are a number of areas where good work is being done, but I think it has to have a much more widespread approach.

(*Mr Battle*) If I could add two things. I think we need, as well, a more careful analysis rather than generalisations, because I think sometimes generalisations can be damaging. One of the generalisations is that youngsters are not interested and they are all entranced by taking up media and business studies, and then we say, no, they should all rush in the direction of science in general. We need a better sense of differentiation; we need to ensure we get the right mix of technical and general skills across a range of disciplines and not within the traditional, narrower science disciplines of the past. One of the things that struck me was that the take-up of science and engineering is poor in some subjects and in some institutions, because across the board the average A level score of science and technology students admitted to a degree course in 1996 was actually higher—it was 19.5—than for all students together, which was down at 18.8. In other words, it was increasing in science, but if you contrasted that with computing the average was only 16.5. I do not, myself, know how you could count three billion genes in the human genome project without understanding computing! What I am finding when I go round to meet companies that are strong in research and development, science and engineering and technology is that they are saying it is not that there are no scientists around, but it is the right quality, the right kind, the right training, the right blend and the right mix. I think we need to have a more detailed analysis of what skills and combinations of new skills—including new sciences—that we will need to find in a modern economy. There is rather more sensitive work that needs to be done, and rather more analysis, to ensure we get the right people of the right kind. With regard to women in science—with the various campaigns, and the Year of Engineering Success—I have been encouraged that there are signs of hope out there of women in engineering. I visited the gas gathering station for the whole of the North East from the North Sea, called the Central Area Transmission System, and it was a joy to see that the chief engineer of that project was a young woman in her thirties who had to leave at twenty to four to pick up her young children. It was great to see that the engineer running it was a woman. I visited an inner city school where people whose first language is Urdu were actually studying the building of a variable gearbox. I do not believe all is lost but we need to do more detailed analyses and support and speak more loudly about those encouraging examples that are going on now, and say to other young women, in particular, that there are good examples and good role models for you to follow. We do not all need to be pulled in the direction of media and business studies alone.



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[Continued]

*Lord Porter of Luddenham*

12. Do you feel that Dearing's suggestions in his report, on the broadening of A Levels and AS Levels so as to bring sciences and the arts more together, is something on the right lines which will perhaps go some way to answering the problems which you mentioned a few minutes ago?

(*Mrs Beckett*) I am wary, my Lord, of trespassing on the territory of my colleague David Blunkett. He has a side-kick that bites, apart from anything else! He is, I know, looking at these issues and it is something which has been tossed to and fro and discussed for a very long time. My impression is that more young people today are more inclined—and, indeed, staff in schools are more inclined—to accept that people will look at a mix and range of studies. In my day it was either arts or sciences and never the twain shall meet. I remember being told I could not do A Level Latin as well as A Level Physics and Chemistry. So I think these things have begun to change. Obviously people will go on examining that and trying to get the right balance, but I certainly do recognise that there is a balance.

*Lord Craig of Radley*

13. Mrs Beckett, there are some in the education establishments who appear to be arguing that because science education is expensive, within a given budget, there is a case for spending more of that budget elsewhere than on pure science. In fact, there was a very lurid headline which said: "Put Science on the Back Burner" says Minister". That was Baroness Blackstone. I would be interested in your reaction to that because it seems to me it can be very disheartening to those who are perhaps marginally interested in going into science. I very much follow and agree with what you were saying a moment ago on going into science based research and education. I wondered how you felt about the way that this has been presented?

(*Mrs Beckett*) What I understand is that this is an article, or a chapter, that Baroness Blackstone wrote some considerable time ago, and that someone has resurrected it—as people have an uncomfortable habit of doing. I well recall—if I may have a second diversion, my Lord Chairman—at my very first outing on the front bench as the shadow Treasury spokesman, John Major, I think he must then have been the Chancellor, quoting against me something I had apparently written in the *Tribune* in 1981. I can tell you quite frankly, my Lord, I had not the faintest recollection at that moment whether I had written it or not! So these things are sometimes resurrected in a way which is not relevant to today's debate. Obviously these are issues which have to be considered and properly examined and thought-through. I do hold the view, however, as I think I indicated a few moments ago, that a scientific education is in itself something extremely worthwhile. Again these things are a matter of balance, and we are always in that difficult debate, are we not? If you believe, as so many people in the education world quite rightly do believe, that the underlying purpose of education is to bring out all the potential which is in an individual and to fit them with as many skills as you can, then clearly a general science or engineering background very much has

something to contribute in that context. So I would certainly take the view that we do need to have that wider spread of scientific knowledge and understanding. If we had had it in the past, perhaps we would not have needed Sir Robert May to send his advice and guidance round Whitehall as to how scientific advice ought to be used.

*Chairman*

14. Can we move on to public expenditure? Can you tell us when you expect to announce the results of the fundamental expenditure review of the science budget?

(*Mrs Beckett*) We expect that the general outcome of the comprehensive spending review will be announced broadly speaking in the New Year; the earlyish part of next year is the hope.

15. In the meantime, the Research Councils are planning on the basis of the figures announced last November for the ensuing three years, that is to say roughly level funding?

(*Mrs Beckett*) As is always the case with these matters, as you will be well aware, my Lord Chairman, yes, in the coming year they are planning as are all departments on the basis of the previous spending plans; that is a commitment the Government explicitly gave before the election and to which we have adhered. When we go beyond that period, there is always a degree of "nebulosity", shall I say, about the further figures. Some people are even more descriptive of the process than that, but clearly while those are the indicative figures for future years they remain, as is always the case, to be looked at, considered and examined.

16. There is, of course, an exception to that rule you have just announced, namely that we understand some money is to be diverted to the National Health Service this winter from your Department among others. Can we be sure that will not affect science spending?

(*Mrs Beckett*) You can be absolutely assured that it has no relationship at all to science spending, or indeed strictly speaking to my Department's budget line in the spending plan. The money became available as a result of BNFL having a greatly improved cash flow, over and above what had been expected. It was identified some little time ago and reported, obviously, to the Treasury, and it is that money which has been used for the National Health Service and has not come from the DTI plans and certainly not from the ring-fenced science programme.

*Lord Jenkin of Roding*

17. How far does your remit go in relation to the science budgets of other departments? For reasons we all understand, the Ministry of Defence science budget has fallen quite sharply, so has the Ministry of Agriculture's. I wonder to what extent you have responsibility or any authority over those science spending budgets?

(*Mrs Beckett*) Sadly, none at all, my Lord. I think with the MOD budget there has been a certain amount of re-classification which has altered the figures and made them not entirely comparable, but



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[Continued]

Lord Jenkin of Roding *contd.*]

I do not dispute at all the basic point you made, that there has been some fall-off in their funding and this has happened in other departments. This is an issue which the Government Chief Scientist is looking at in his overall assessment of what is happening in terms of the research base and research funding across Whitehall, and again all of that does feed into the spending review.

18. Some of us had occasion the other day at the opening of the Griffiths Laboratory at DERA to be very impressed by the plans they have for getting the civil spin-off, something a number of us have been searching for for some time. It seemed to me that that at least must be very relevant to your role as Science Minister and I wonder whether you are taking an interest in that?

(*Mrs Beckett*) We are certainly, and again Sir Robert is looking at issues such as the civil use of research—dual use technology and issues of that kind—and these are certainly things in which we are taking a keen interest.

Chairman

19. Things like the decline in the Ministry of Agriculture's budget do in fact impact on the Research Council system through the commissioned research, which presumably is no longer funded. I wonder how that is being handled? In the past there have been great difficulties over staff redundancies and so on.

(*Mrs Beckett*) As I say, this is an issue we are looking at. This is, as you will appreciate, my Lord, an inherited position and one with which we have to grapple. I do not know whether, since you asked about specific consequences, Sir John wants to add anything?

(*Sir John Cadogan*) The phenomenon is certainly very much in my mind because I have to administer it, and this will certainly be an issue in the CSR.

Lord Flowers

20. Minister, I am sorry to press you about your overall responsibilities for science, but if it came to your ears that certain departments were downgrading the significance they gave to scientific advice—and this has happened in Government departments before, I am only quoting something which is a fact—would you take it upon yourself in Cabinet to protest about this, or at least demand an explanation? Do you see yourself as in some sense responsible for the general level of scientific advice to Government across the board?

(*Mrs Beckett*) I think as I see it, and again I do not want to say anything which will cause my colleagues any great concerns, I do see an overall responsibility for myself and Sir Robert May in reporting to the Prime Minister these kinds of issues and concerns. I am always anxious to approach these issues in a way which is effective rather than necessarily attracting a great deal of public attention, but however it was tackled (whether one thought the right way to go about it was to raise it in Cabinet is another matter and would depend on the circumstances) I am very mindful indeed of the importance that as an

incoming government we have all attached to planning for Britain's long-term future. Part of the reason why I am very pleased we are having a comprehensive spending review is that it does give us an opportunity to look more widely and look more long-term at a very early stage in the life of the government, but even once that comprehensive spending review is over there is a duty on the incumbent of my office to be one of the people who is continually encouraging that we look at the long-term impact of decisions. I am very, very mindful of your and my distinguished colleague, Lord Barnett, in the book he published some years after he ceased to be Chief Secretary, and I remember one of the points he made which struck me then as shadow Chief Secretary very forcibly about how easy it all was then to make the cuts in capital funding which brought short-term relief but left long-term problems. Obviously there are always difficulties from time to time for any Government and there is no easy solution to any of these issues, but bearing in mind that long-term perspective—and the question you raise is very much part of that—is very, very important I certainly take it extremely seriously.

Baroness Hogg

21. President, may I press you a little further on the structural arrangements for what is, as you rightly say, a perennial problem, because it arises in any public expenditure review or indeed in any annual public expenditure round? What are the structural arrangements within government for ensuring at some point there is a pause and review to see what is happening overall to the science budgets of departments? There is a natural tendency of course for every departmental head, when under pressure, to squeeze the science budget and there therefore does need to be a very formal process of review of any public expenditure review to stop, take note and see what is happening. Then my second, and perhaps most important, question is, where does the ultimate responsibility lie for ensuring that that squeeze has not been too savage? As you were describing your role a moment ago, it sounded to be, as you frankly admitted, not a role of authority but able to make a protest. If it is clear this is a responsibility the Prime Minister is reserving to himself, those who are concerned for these problems know where to put the arguments; if it is with you, they know to address them to you.

(*Mrs Beckett*) In view of your final remarks I shall answer this question, if I may, with extreme caution! The last thing I want to be accused of doing is increasing the burden of correspondence and pressure on the Prime Minister! I am not aware, and in a moment if I am not getting this quite right I will ask Sir John to comment, of having inherited any structural arrangements as such for taking this kind of overall view. I share your view it is extremely important but I am not aware that any structure presently exists for allowing me to do that, other than the wider role of the Chief Scientist and, perhaps to a degree, of Sir John himself. I see that one of the potential benefits of the discipline which the new Government has adopted and of the fact that it is



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[Continued]

Baroness Hogg *contd.*]

then set against the background of the comprehensive spending review, is that it explicitly creates an opportunity for us now to do precisely that, look across departments at what is happening to the science budget, what implications that has and considering what it ought to be as opposed to perhaps what it is. Having done that, I think it will be at first primarily in terms of advice coming from Sir Robert and from Sir John and their colleagues in OST, to tell me whether they think there is a need for some form of new structural arrangements and where we can continue that sort of approach on a more long-term basis. You may well be right, that there was a lack in the government machine as it previously existed which ought to be reconsidered and addressed.

Lord Flowers

22. I am slightly surprised by that because we have a Council for Science and Technology. Is that not what it is for?

(*Mrs Beckett*) I think in that context I do not think that has been seen as part of its role. Lady Hogg is asking, as I understand it, about the specific monitoring of what is happening in departments and what impact that has. The CST has not been engaged in those specific, almost public expenditure, concerns.

Baroness Hogg

23. It may not have access, after all, to public expenditure negotiations as they go on before they go public?

(*Mrs Beckett*) That is right.

24. There certainly was this process in the annual public expenditure round and this may be to some extent a victim of the fact that, for reasons which are perfectly understandable, you are not having a normal round this year. But it does need to be built into the fundamental review.

(*Mrs Beckett*) Yes, I agree. I thought, when you mentioned structural arrangements—yes, of course it would be a feature in a normal PES round discussion—I thought you were referring to something more formal, so perhaps we were at slightly cross-purposes there. When you say, where does the ultimate responsibility lie, obviously to some degree it does lie with me to alert colleagues, but I do not need to say to you that these things are all a balance of forces, of discussions—the Chancellor has a view and the Chief Secretary has a view—and it has to be thrashed out ultimately as a matter of collective government, and the buck finally stops with the Prime Minister, but don't anybody tell him I said that!

Lord Craig of Radley

25. Could we move to telecommunications and information technology? You mentioned in your opening remarks the additional funds being put into the Information Society Initiative, and I certainly noticed the web pages on the Government's "IT For

All" have been expanded and improved, all of which of course is very welcome. We reported a year ago in this Committee in a paper called, "The Information Society: An agenda for action in the UK", but a number of our recommendations were not accepted by the previous administration. One in particular was the appointment of a high-level Information Society Task Force. The Government at the time took the view that the ministerial committee arrangement under your predecessor, chaired by the then Lord Privy Seal, Viscount Cranborne, was the way in which they wished to tackle it, presumably supported by a cross-departmental group of officials. What I am not clear on, and perhaps you can help me, is how your administration is now tackling this fairly self-evident need to get one's collective arms around information technology and the information society?

(*Mrs Beckett*) Yes, I am aware, my Lord, that the previous Government did not feel able to accept that recommendation for a high-level task force, and the present Government, I fear, is not minded to reverse that decision, for two reasons I would say. One is, as is often the case with proposals of this kind, the debate and the way these issues are handled to some degree moves on, but also I think we would argue that the whole debate across society, and understanding and knowledge in society, has moved on to such a degree that there is already a very wide spread of understanding and interest and knowledge and awareness of the information society across the government and a whole range of activities and undertakings going on which means we have passed beyond the point when you need a body particularly to promote awareness within and across government, which I understand to have been the thinking behind the initial proposal made by your Lordships a year or two years ago.

26. A year ago, yes. If I may, it was a bit more than that because it was promotion not only across government but more widely to the public at large, and we felt that that task force would have a responsibility to enlighten the public and help the public to understand and back up the sorts of initiatives which you have already got in hand.

(*Mrs Beckett*) I completely share that view, my Lord, and I did not mean to imply we were thinking only within government, but in the context of the previous ministerial committee I was thinking of within government. In fact we are very much engaged in a whole range of initiatives to increase public awareness. I recently increased by just under £3 million the funding for the "IT For All" scheme. The whole purpose of that, I believe, is that it can stimulate something like 4,000 extra sites where members of the public can gain ready and easy access and familiarity with IT. There is the "Programme for Business" and there are now some 35 local centres and we hope very shortly there will be 40 more. There is a whole range of other things too. My colleague, Barbara Roche, for example, deals particularly with the small and medium-sized enterprise sector and is engaged in discussions about how we can do far more with small businesses where there is a good deal of evidence to suggest there is a real gap. So I think it is simply that an enormous amount is already being



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Lord Craig of Radley *contd.*]

done, and at the moment we do not see the necessity for a further single group to co-ordinate what is already being undertaken. If, in time, gaps are identified and having reassessed the position as it now is, the Committee feels this is an issue which ought to be re-explored, we would be very pleased to have your views. But at present our feeling is that this is something which is not needed and none of us is in favour of setting up extra bodies which are only duplicating something which is already being undertaken.

*Lord Jenkin of Roding*

27. Could I refer to another part of the recommendations which came from that Committee, of which I have to say I was not a member, and that is the question of the liberalisation between broadcasters and cable and telecommunications generally? That whole process started when I held your job, or at least part of it, and we envisaged six years of a duopoly and thereafter the cable companies and everybody would be free to do it. In fact my successors did not do that and this Committee has recommended again there should be completely free competition by the year 2001. Have you come to any conclusions about this?

(*Mrs Beckett*) Although we did not dissent from the previous Government's recommendation with regard to the task force, we have taken a different stance on the issue you have raised, my Lord, and the handling of this particular programme and the timing and so on. I am not in a position to give you the outcome of those considerations today, but what I can say to you is that even before the election we had indicated we did not share the view of the previous Government. Some reassessment is having to be undertaken because the position is changing within the industry, but we do hope to be able to announce the conclusions in the relatively near future. I am sorry not to be able to tell you today, but I can assure you we are looking at this issue and we do not take the view of the previous Government on this matter.

Lord Jenkin of Roding] I, for one, will watch this with great interest.

*Baroness Hogg*

28. Directly following that, President, if I may, has your thinking progressed on the timing of the review of the regulatory regime, and in particular of the issue raised in that report of the overlap or potential conflict between the remit of the various regulatory bodies in the field of media and telecommunications?

(*Mrs Beckett*) No, that is very much an area which is still under examination. Again I think that is an area where the previous Government did not share the view of this Committee that it ought to be examined, but we do share—

*Lord Jenkin of Roding*

29. The two things go together, regulation and liberalisation.

(*Mrs Beckett*) Yes.

*Baroness Hogg*

30. But not necessarily.

(*Mrs Beckett*) We do share the view that these issues do need to be looked at. Obviously, we have on the one hand a rather more specific review about utilities regulation itself, where we hope to be able to publish a green paper perhaps in the New Year, but it will be very much a green paper looking to full consultation. What is being undertaken at the moment is an intergovernmental review and then we will go out to much wider consultation. But the issue of regulation in the field you are raising, obviously does raise a whole range of even wider and quite complex and difficult issues and, yes, we are certainly looking at that. I cannot at the moment give you a clear timescale, but we are not talking about the end of the Parliament or anything like that, I do not think.

31. Would you see media and telecommunications being dealt with within the same green paper framework as other utilities regulation questions?

(*Mrs Beckett*) I doubt it, to be honest. One should never rule anything out when things are being formulated and the consideration is still under way, but although it raises some of the same issues in terms of a general approach to regulation *per se*, it does raise some completely different and quite separate issues and under very different legislation too, so I think it is a mixture. There may be something which comes out of the general review which informs our approach to regulation as a whole, and that might be one input to the communications review, but not the only one.

*Chairman*

32. We have already trespassed on your time greatly, President, and we must let you go, but can I ask a final, quick question? Can we infer from your reply to our report on the European Union Framework Programme that you are prepared to reconsider the attribution system?

(*Mrs Beckett*) I am very mindful, my Lord Chairman, of the views expressed by the Committee and indeed by many others. You will know that it is thought that such a system—and I think there is merit in the argument—does contribute to a degree of fiscal discipline, in that it makes departments think about whether they will get value for money and not just whether they can get money. But all I can say to you is that we will consider, we are considering, the implications of European expenditure as part of the overall comprehensive spending review.

33. Thank you very much. President, Minister, Sir John, thank you very much indeed for coming to see us.

(*Mrs Beckett*) Thank you.



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[Continued

**Supplementary note from the President of the Board of Trade****WRITTEN ANSWERS TO QUESTIONS ON INNOVATION THAT THERE WAS NO TIME FOR THE COMMITTEE TO ASK WHEN RECEIVING EVIDENCE FROM THE PRESIDENT OF THE BOARD OF TRADE AND COLLEAGUES ON 29 OCTOBER 1997**

*The Committee, in their report on the Innovation-Exploitation Barrier, highlighted the need for a clearer understanding of the contribution of "Business Angels" to business start-ups and early stages, and identified the Enterprise Investment Scheme database as an important new source of information (para 2.21). What steps are being taken to ensure that this informs policy?*

I agree with the Committee's belief that Business Angels have an important role to play in providing hands-on help with management and access to finance for small growth firms. The Government welcomes the contribution these individuals are making and wants to encourage greater co-operation between Business Angel Networks to raise standards and maximise Business Angel activity.

In view of this, I agree it is important to develop a clearer understanding of their present involvement and the factors that influence their activity. In the case of the Enterprise Investment Scheme (EIS), however, while this may be used as an investment vehicle by Business Angels, it is also used by individuals who would not generally be classified as Business Angels. The information related to EIS does not therefore focus specifically on the role being played by Business Angels. Nevertheless, my officials are talking to Inland Revenue officials about what information is available from EIS data and how it might be used.

Thankfully, there are other sources of information. Some of these, such as the study "Supporting the Informal Venture Capital Market: What Still Needs to be Done!" by Mason and Harrison, have been commissioned by the DTI. In addition, DTI officials are in contact with organisations such as the British Venture Capital Association, the Local Investment Network Company and Business Links which have regular contacts with Business Angels and Business Angel Networks and can provide information and experience about their activities.

There will always be difficulties in assessing precisely the extent and nature of this form of finance because much of the activity takes place outside the Networks and remains private transactions between investors and businesses. However, the above sources of information are helping to inform policy and giving us a greater understanding of the extent of business angel activity, the motives and preferences of angels and the factors that restrict their activity.

*Your response to the Innovation-Exploitation Barrier Report answers the Committee's recommendation for analysis of the Science Parks phenomenon, by mentioning a study of Cambridge (para 48). Are you satisfied that this study of one particular Science Park out of about 50 will give a wide enough perspective?*

The Cambridge Science Park is internationally recognised to be a highly successful example of its kind, and an effective facilitator of innovation. While Cambridge can be said to be atypical in some respects—as a result of the remarkable concentration of knowledge and skills in such a limited area—I believe there are many useful lessons to be learned from this example that can be more widely applied. The DTI is in regular dialogue with the UK Science Parks Association to ensure that science park companies are well informed about current DTI programmes and that they take full advantage of the help that is available from local, regional, national and international sources. This contact also ensures the Government maintains up-to-date information on more general issues related to science parks.

One of the worrying features of UK science park firms that are university spin-outs is that relatively few grow into medium or large firms. Most show moderate-high growth in their early years but rarely achieve all their early promise. I hope that the Cambridge study will shed light on the reasons for this. In this context, I believe it is important that the study, as well as examining the role played by the Science Park, will cover a broader range of issues related to the development of technology based firms around Cambridge, following on from the *Cambridge Phenomenon* report of 1985. These include availability of finance, the importance of academic links, the role of entrepreneurial or managerial training and the role of local government/business support organisations in development of the region.

I hope that the study will provide up to date information about the constraints on the growth of small high-technology firms that will allow us to re-focus current efforts to help such firms, whether or not sited on a science park.







ISBN 0-10-403098-4



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